



Improving immunization registration, coverage and monitoring in Viet Nam – PATH's Digital Immunization Registry (IR) System



Viet Nam's public health system currently uses a paper-based immunization registry system. Health workers based at the commune health centres (CHCs) compile handwritten lists of children and pregnant women due for vaccinations and inform them through home visits or mail. When the vaccines have been administered, the details are recorded by hand and compiled in monthly reports, which are sent to the district health centre. But this system is time-consuming and prone to errors, which can cause delays, leaving children and pregnant women at greater risk of contracting vaccine-preventable diseases. Data inaccuracies also make planning difficult, leading to poor management of vaccine stocks and overall lack of efficiency.

PATH's new Digital Immunization Registry System (Digital IR) allows for real-time access to immunization data and easy generation of reports at the CHC and district levels. It also allows for faster and more accurate recording and reporting of immunization details; improves the timely delivery of services; and facilitates programme monitoring. This system is designed to ultimately replace the current paper-based immunization registry, thereby increasing efficiency at all levels of the health system (commune, district, provincial and national) and reducing the workload of health staff.

How Digital IR works

Digital IR eliminates the need for handwritten lists, calculations and reports by providing CHCs with a web-based application that is accessible on computers and smartphones. Newborns and pregnant women are registered by a health worker via a computer or smartphone. The system then sends text message (SMS) reminders to parents about monthly child immunization days, and tracks the vaccines they receive. Digital IR also generates information on the types and numbers of vaccines CHCs need to administer every month, thus avoiding stock-outs, and provides lists of individuals due for vaccinations.

Supporting national public health programming

The Digital IR project supports Viet Nam's Expanded Programme on Immunization (EPI) and efforts to mainstream technology solutions in health management, as highlighted in the Ministry of Health's Five-year health sector development plan 2011–2015 (1). The system's ability to track pregnant women's due dates and tetanus toxoid vaccination dates will contribute to the Government's efforts to ensure more than 90% coverage in pregnant women. Digital registration of newborns will also assist the National EPI by providing the actual number of births for careful planning and accurate monitoring of childhood immunization coverage, instead of the crude birth rate.

The Digital IR pilot project in Ben Tre Province, Southern Viet Nam, aims to provide the Government and the Ministry of Health with evidence of the value that can be added by this system, and this model can eventually be scaled up nationwide. Both the National EPI and the programme in the Southern Region (Southern EPI) will help coordinate the pilot project activities by providing technical support in software development, training sessions for trainers and health workers, and remote support and field visits. They





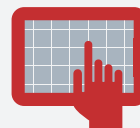
Pregnant women and newborn babies are registered in the Digital IR system



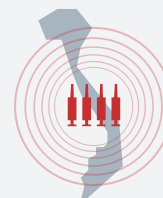
Parents receive SMS reminders about monthly immunization days for their children



Pregnant women and infants receive prompt services, improving the rate of on-time immunizations



Digital IR allows for real-time access to immunization data and easy generation of reports, reducing workload and errors



Digital IR contributes to planning and monitoring of immunization coverage and vaccine stocks

will also participate in workshops to hear feedback from end-users and address any issues that arise during early implementation. Based on the lessons learnt, National EPI and Southern EPI will consider regional and nationwide scale-up of Digital IR.

Partnerships for support and sustainability

PATH is collaborating with relevant national health programmes – National EPI and Southern EPI – to implement this project, and will foster their continued commitment. Given the limited capacity of the current Global System for Mobile Communications (GSM) to accommodate SMS messages sent during the project, PATH has partnered with a service provider that has better capacity to manage the increased number of SMS messages when the project is scaled up. Through the project, PATH will build a long-term partnership between National EPI and the country's largest telecommunications company to maintain continuous SMS provision, supporting future nationwide implementation.

IWG catalytic grant for mHealth programme scale-up

PATH's Viet Nam office was awarded a grant to scale up the Digital IR programme in Viet Nam by the United Nations Innovation Working Group's (IWG's) catalytic grant competition for maternal, newborn and child mobile health (mHealth), managed by the United Nations Foundation. PATH was successful in the grant competition because it employs an effective delivery strategy for an evidence-based maternal and child health intervention, combined with creative financing strategies to promote sustainability – elements that are critical for mHealth tools to contribute to Millennium Development Goals 4 and 5.¹ Through IWG, PATH is receiving assistance from

¹ MDG 4 is to reduce child mortality; MDG 5 is to improve maternal health (www.unmillenniumproject.org/goals/gti.htm)

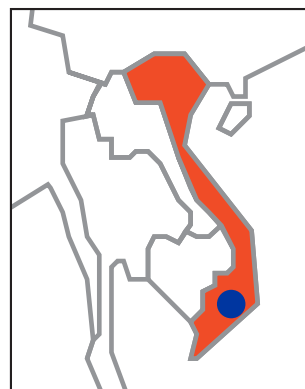
Reference:

1. Five-year health sector development plan 2011–2015. Hanoi: Ministry of Health, Government of Viet Nam; 2010 (http://www.wpro.who.int/health_services/viet_nam_nationalhealthplan.pdf, accessed 8 August 2014).

Credits:

Icons from The Noun Project designed by: Jack Biesek, Gladys Brenner, Margaret Faye, Heather Merrifield, Kate Keating, Wendy Olmstead, Todd Pierce, Jamie Cowgill and Jim Bolek, Luis Prado, Matt Daigle, Roger Cook & Don Shanosky, Jens Tärning, Yorlmar Campos
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Viet Nam

- Number of children under 1 year old
- Number of children exactly 18 months of age
- Number of pregnant women

Viet Nam

Pilot project: Ben Tre Province, Southern Viet Nam
Districts reached: all 9 districts in the province
CHCs reached: all 164 CHCs in the province

Target number of individuals to be reached during the pilot project, by district, 2014:

District:			
Ba Tri	2 809	3 233	2 809
Ben Tre	1 463	1 696	1 463
Binh Dai	1 876	2 184	1 876
Chau Thanh	1 901	2 163	1 901
Cho Lach	1 491	1 640	1 491
Giong Trom	2 452	2 719	2 452
Mo Cay Bac	1 662	1 851	1 662
Mo Cay Nam	2 125	2 506	2 125
Thanh Phu	2 335	2 659	2 335
Total	18 114	20 651	18 114

the World Health Organization's Department of Reproductive Health and Research to optimize scale-up of the Digital IR programme while contributing to the mHealth evidence base and best practices on implementation and scale-up. Please visit <http://www.who.int/reproductivehealth/topics/mhealth/en/> or www.path.org for more information.

Partners: National Expanded Programme on Immunization (National EPI), Southern Region Expanded Programme on Immunization (Southern EPI), Ben Tre Health Department, Ben Tre Provincial Preventive Medicine Centre and nine district preventive medicine centres

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Ben Tre Province, Southern Vietnam at 9 (all) districts within the province for a total reach of 164 Community Health Centers (CHCs).

Demand for services
Loss to follow-up

Lack of population enumeration
Delayed reporting of events

Quality/unreliability of data
Timeliness of care

Delayed reporting of events
Access to information or data

Loss to follow up
Timeliness of care

Supply of commodities
Effective resource allocation

IMPLEMENTATION STRATEGY = FUNCTION + PURPOSE

1 Client education & behaviour change communication (BCC)

2 Sensors & point-of-care diagnostics

3 Registries / vital events tracking

4 Data collection & reporting

5 Electronic health records

6 Electronic decision support
Information, protocols, algorithms, checklists

7 Provider-to-provider communication
User groups, consultation

8 Provider workplanning & scheduling

9 Provider training & education

10 Human resource management

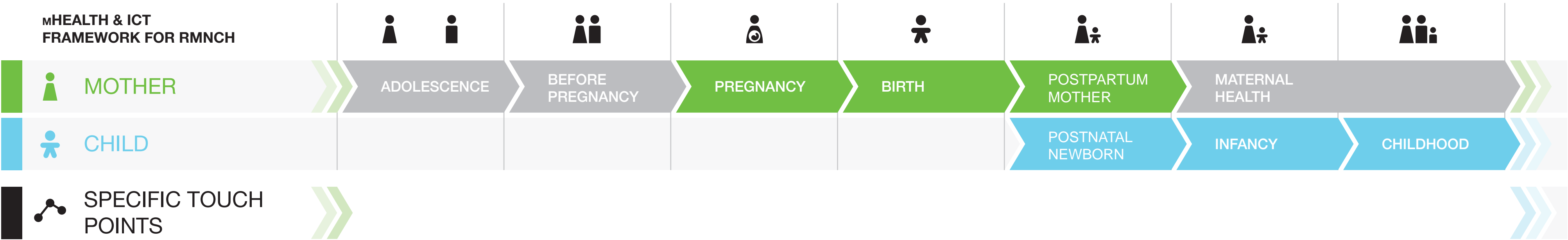
11 Supply chain management

12 Financial transactions & incentives

3 Pregnant women/newborns are registered by health workers through electronic forms on web-based interface via either computer or smart phone

4 Electronic platform for data collection on immunization days for automatic generation of immunization reports, which are more accurate and timely

11 Automatically generated list of due vaccinations for accurate calculation of vaccine stock required



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